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Wahi et al.

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(45) **Date of Patent:** **Sep. 5, 2017**

(54) **ELECTROSTATICALLY CHARGED NASAL APPLICATION METHOD AND PRODUCT FOR MICRO-FILTRATION**

(71) Applicant: **TRUTEK Corp.**, Somerville, NJ (US)

(72) Inventors: **Ashok Wahi**, Basking Ridge, NJ (US); **John Lawrence Dequina**, Bridgewater, NJ (US); **Kanika Wahi**, Basking Ridge, NJ (US); **Bernard Foss**, Somerset, NJ (US)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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A61K 31/135 (2006.01)
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A61K 9/70 (2006.01)

(52) **U.S. CL**

CPC **A61K 31/14** (2013.01); **A61K 9/0009** (2013.01); **A61K 9/0014** (2013.01); **A61K 9/0043** (2013.01); **A61K 9/7007** (2013.01)

(58) **Field of Classification Search**

CPC **A61K 9/0041**; **A61K 31/14**; **A61K 31/135**
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See application file for complete search history.

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Primary Examiner — Raymond Henley, III

(74) *Attorney, Agent, or Firm* — Stanley H. Kremen

(57) **ABSTRACT**

A method of microfiltration of inhaled air for nasal application and product for reducing the risk of inhalation of fine and ultra-fine (i.e., microscopic and submicroscopic) sized atmospheric pollutants by applying a formulation topically to the skin above the upper-lip and in close proximity of the nasal passages. The products of this formulation, when applied, create an electrostatic field for reducing the inhalation of fine and ultra-fine airborne pollutants.

5 Claims, No Drawings



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(12) **United States Patent**
Wahi et al.

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(54) **ELECTROSTATICALLY CHARGED NASAL APPLICATION METHOD AND PRODUCT FOR MICRO-FILTRATION**

(71) Applicant: **TRUTEK Corp.**, Somerville, NJ (US)

(72) Inventors: **Ashok Wahi**, Basking Ridge, NJ (US); **John Lawrence Dequina**, Bridgewater, NJ (US); **Kanika Wahi**, Basking Ridge, NJ (US); **Bernard Foss**, Somerset, NJ (US)

(73) Assignee: **TRUTEK CORP.**, Somerville, NJ (US)

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(65) **Prior Publication Data**

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(52) **U.S. Cl.**

CPC **A61K 31/14** (2013.01); **A61K 9/0014** (2013.01); **A61K 9/0043** (2013.01); **A62B 23/06** (2013.01)

(58) **Field of Classification Search**

CPC **A61K 9/0041**; **A61K 31/14**; **A61K 31/135**
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See application file for complete search history.

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8/161

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(57) **ABSTRACT**

A method of microfiltration of inhaled air for nasal application and product for reducing the risk of inhalation of fine and ultra-fine (i.e., microscopic and submicroscopic) sized atmospheric pollutants by applying a formulation topically to the skin above the upper-lip and in close proximity of the nasal passages. The products of this formulation, when applied, create an electrostatic field for reducing the inhalation of fine and ultra-fine airborne pollutants.

17 Claims, No Drawings



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(54) **ELECTROSTATICALLY CHARGED NASAL APPLICATION PRODUCT WITH INCREASED STRENGTH**

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(57) **ABSTRACT**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 370 days.

The present invention relates to a nasal topical application product for restricting the flow of airborne contaminants into a human nasal passage by creation of a proximate, enhanced electrostatic field. This nasal application product includes: (a) a plurality of masses of one or more electrostatic polymers; and, (b) a topical carrier having the plurality of masses dispersed through a portion thereof. At least one of the electrostatic polymers is a poly (dimethyl diallyl ammonium chloride) polymer and is included in the product in an amount of at least 10% by weight, based on the total weight of the polymers and the topical carrier. The nasal application product may be topical solutions, semisolids, spray solutions and vaporizable solutions. Topical applications may be in the form of ointments, pastes, creams and gels. The carrier of the nasal application product of the present invention may be selected from the group consisting of diluents, volatile spray carriers, lotions, solvents, gels and hydrogels. In some embodiments, substrates, e.g., bandage type substrates, with adhesive on one side and the product polymer(s) and carrier on the opposite side, may be employed.

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(52) U.S. Cl. **424/434**; 424/443; 424/484; 424/485; 424/486

(58) Field of Search 424/434, 443, 424/484, 485, 486, 43

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20 Claims, 2 Drawing Sheets

